Original Article

A Study to Access Interactive Communication in Mechanically Ventilated Critically Ill Patients: A Video-Based Observational Study at K. S.P. Hospital, Balasinor, Dist. Mahisagar, Gujarat

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Abstract:

Background: Mechanically ventilated critically ill patients need the opportunity to communicate their physical and psychosocialconcerns to nurses. However, these patients face the unique problem of lacking even the opportunity to communicate.

Materials & Methods: The study was designed as a video-based descriptive observational study. Systematic sampling was used in this study. Participants included seven mechanically ventilated critically ill patients at the intensive care unit, coronary care unit, or high care unit who were conscious and seven registered nurses (seven pairs).Videos were recorded continuously from 8am to 4pm, and the foot age was then descriptively analyzed. Data collection took place between July 2019 and June 2020.

Results: The total recording time was 60.0 minutes. of these 60.0 minutes, nurses stayed in the Conversation Area of the Patient for 27.6 minutes, and of these 27.6 minutes, two-way face-to-face communication between nurse and patient occurred for 28.0 minutes. of these 28.0 minutes, communications were started by nurses for 47.2 minutes (174 scenes) and by patients for 24.2 minutes (36 scenes). The patient-started two-way communication scenes included 37 instances of Patient-Intentional-Action that triggered the start of communication. Actions using the upper limbs were observed in 20 instances and represented the most frequently used body part. The head/face, lower limbs, or trunk were also used in some of the actions. Gestures were the most commonly used action type (14instances). Other types included lip movement, grimace, leg flex/extension, and cough.

Conclusions: We found that nurses tended to start communication more frequently than patients did and that patients demonstrated Patient-Intentional-Action with a variety of actions using

various body parts. Communication opportunities for patients were created when nurses took the initiative to start communication or when they noticed and responded to the Patient-Intentional-Action. Our findings demonstrate that nurses need to recognize and always respond to Patient-In-tensional-Action and to take the initiative in communicating rather than waiting for the patient to do so.

Keywords: Access; interactive communication; mechanically ventilated; critically ill patient

Introduction

Communication is one of the most pressing challenges when it comes to mechanically ventilated critically ill patients. Communication in clinical settings is essential[1] and improves patient outcomes [2], but patients with mechanical ventilation face unique problems with communication, such as not being understood by the nurse[3–5]or lacking even the opportunity to communicate.

Our focus in this study is on the lack of communication opportunities. Critically ill patients with mechanical ventilation typically have physical problems such as pain, dyspnea, thirst, or sleeplessness that need to be communicated[6–8],and they also experience psychosocial problems such as anxiety or fear triggered by receiving invasive treatment in critical care settings [8, 9]. It is essential that patients have the chance to communicate these physical concerns to nurses, but they may not have access to such opportunities. The lack of opportunities to communicate is therefore a serious issue that needs to be resolved.

Prior research has indicated that patients experience a lack of opportunities to communicate with nurses showed that patients had no chance to communicate because nurses were not aware that they wanted to, even though the patients were signaling reported that patients experienced being left one without nurses being aware of their communication found that patients experienced feelings of neglect and of the nurses being absent, as nurses did not speak to them or stay close enough to notice their signals. Nurse identifies attention–seeking actions per-formed by patients and noted that while nurses responded immediately to such cues, the responses were sometimes too late.

These studies clearly indicate that patients want to communicate with nurses but lack the opportunities to do so. Previous studies have also identified the lack of communication opportunities as a typical experience when wearing mechanical ventilator. However, there have been very few studies that focus on communication opportunities themselves for patients and describe them in detail. As such, it remains sun clear whether the patients have communication opportunities, what kind of opportunities these may be, and how long these opportunities may last.

It is also not clear what actions patients use as causes to indicate the desire for communication with nurses and how often these actions are performed. To answer these questions accurately, it is necessary to obtain continuous observational data over a long period of time, rather than partial observational data for just a few hours while the patient is on the ventilator and to analyze this data and describe it in detail. Such effort would enable us to examine nursing practices more

thoroughly to ensure that patients have the opportunity to communicate. In this study, we aimed to describe the characteristics of communication opportunities for critically ill mechanically ventilated patients with respect to the following research questions:

- What is the frequency and duration of communication between patient and nurse?
- What actions do patients take to signal a desire to start communication?
- Communication opportunity is defined here as a two-way face-to-face interaction in which a person verbally or non-Verbally conveys their thoughts and feelings to another.

Materials & Methods

Study design: The study was designed as a video-based descriptive observational study

Setting: We collected the data from three units of two hospitals in cities located in Gujarat. One hospital was 240-bed general hospital, where four of the beds were located in the high care unit (HCU).Theotherhospitalwasa150-bed cardiovascular hospital, where eight of the beds were in the intensive care unit (ICU), and four were in the coronary care unit (CCU).

Sampling techniques: Systematic sampling techniques

Sample Size: 100

Participants: Mechanically ventilated critically ill patients and the registered nurses assigned to them participated in the study.

Data Collection: Data collection took place between July 2019 and June 2020. We utilized video recording for the data collection because it enabled us to observe all the actions taken by patients and nurses and to access the data repeatedly. Observing using video recording is known to be auseful and powerful data acquisition tool. Video recordings can accurately record the complex nature of nursing phenomena and allow multiple researchers to scrutinize the data during the process of analysis.

Results: We first classified the recorded data and then analyzed it to identify the frequency and duration of communication between patients and nurses. We also investigated what type's ofactions patients took to signal a desire to start communication and how many times the patients performed thoseactions. The analysis results were reported and discussed at regular meetings attended by multiple researchers who were licensed registered nurses with clinical experience. ELAN version 5.9 was used for annotating thevideo.

Classification of Recorded Data: we performed three steps (Steps and to classify the recorded data.

Or less without conversation is uncomfortable, so we defined CAP here as pace approximately 150 cm to the left and right from the center of the bed on which a patient was lying and approximately 50 cm above the headboard (Figure We set the space above the head board to 50 cm because there was a shelf at the back of the headboard, leaving only approximately50cm of space.

Step 1

Who stayed in the CAP?

First, we extracted data in which the assigned nurses were in the CAP and classified them as Patient-Nurse scenes. Patient-Nurse scenes always included the patients and theirassignednurses. Moreover,the medicaldoctors, physiotherapists, medical engineers, or nurses who provided carein conjunction with the assigned nurses were included in some Patient-Nurse scenes.

Second, we extracted data in which healthcare professionals were in the CAP and classified them as Patient-Staffscenes. Patient-Staff scenes always included patients and healthcare professionals such as medical doctors or physiotherapists but did not include the assigned nurses. We classified scenes with no one in the CAP accept the patient as patient only scenes.One Patient- Nurse Scene was extracted as a single continuous scene from the time when a part of a nurse'sbody entered the CAP to when the entire nurse's body left the CAP. The patient-staff scenes were extracted in the same way.Flow diagram for classification of recorded data. CAP: Conversation Are a of the Patient. A space approximately150 cm to the left and right from the center of the bed on which a patients lying and approximately 50 cm above the head board. The nurse in Patient-Nurse refers to nurses assigned to the patients who participated in the study. Some Patient-Nurse scenes included additional health care professionals such as medical doctors, physiotherapists, medical engineers, or nurses who provided care in conjunction with the assigned nurses. The Staff in Patient-staff refers to health care professionals and does not include nurses assigned to the patients who participated in the study.

Step2. Did senders receive feedback from receivers?

We classified the Patient-Nurse scenes into three categories based on whether senders received feedback from receiver.

Step3: Who started communication?

We classified each two-way and one-way communication scene into one of three categories based on who startedthe communication: when a patient took the first action, when a nurse took the first action, and when a health care professional took the first action.

Frequency and Duration of Communication between patients and nurses: We calculated the total duration of each of the scenes classified in Section 2.6.1, namely, Patient-Nurse scene, patient-staff scene, and Patient-Only scene; two-way communication scene, one-way communication scene, and no-communication scene; and patient-started, nurse-started, and staff- started two-way and one-way communication scene. We also counted the number of two-way communication scenes started by patients or nurses. Note that all scenes were calculated on the order of milli seconds, but we use minutes for the discussions in this paper.

Types and frequency of actions and the body parts used for those actions: Patient-Intentional-Action, which is an intentional action taken by the patient to signal a desire to start communication in a patient-started two-way communication scene, was identified as follows.

"One-way communication" started by Patient
Patient: Scratchesnose.
The patient performed the action of" scratches nose", but there was no feedback from anyone.

"Two-way communication" started by Patient
Patient: Moves lips. Nurse: "Um what?"Patient: Moves lips. Nurse:"Are you hot?" Patient: No. Nurse: "All right. I'll take o☐ the blanket."Patient: No.
The patient performed the action of "moving lips" and received "Um, what?"Feedback from the nurse. The nurse understood that the patient was hot.

"Two-way communication" started by Nurse
Nurse:"Mr. A, today, I plan to give you a head bath."Patient: No. Nurse:"Refreshing." Patient: Smiles. Nurse:"Ha-Ha-Ha."(Nurse laughs a smile.)
The nurse uttered "Mr. A, today I plan to give you a head bath" and received "No" feedback from the patient. The patient understood that the nurse planned to give him a head bath.

"One-way communication "started by Nurse
Nurse: "I will touch your hand."
The nurse said to the patient, "I will touch your hand"before checking theIV line, butthe patient didnot respond.

Types and frequency of patient-intentional-actions and the body part used for those actions: We extracted 37 Patient - Intentional-Actions from the 36 two-way communication scenes started by patients (there was one extra action because one patient performed two actions at the same time). Of the 37 actions, patients performed 20 using the upper limbs and 10 using the head or face.

We categorized the 37 Patient-Intentional-Actions into 12 action types (lipmovement, grimace,gesture, write in the air, flex or extension of lower limbs, cough, etc.). The mostcommon action was gesture, which we observed 14 times. Examples of gestures in our study include the patient pointing to the intubation tube, the patient beckoning to a nurse, andthe patient miming the action to drink water. Lip movement to imitate speech was observed 5 times and was only used by the tracheostomy patient. Ten types of action other than gesture and lip movement were observed one to three times each pushing the nurse-call button, searching forthenurse-callbutton,adjustingthepositionofthelowerlimb,and adjusting the position of the trunk were observed onceeach.**Examples of two-way and one-way communication scenes**: Each box shows the actual communication between the patient and the nurse. In the boxes showing one-way communication, only the actions of the patient or the nurse are displayed.

Discussion

Our analysis clarified the frequency and duration of communication between patients and nurses and the types and frequency of Patient-Intentional-Actions. To date, few studies have described in detail the frequency and duration of communication between patients and nurses based on dataobtained from video recordings. In addition, while previousstudies have shown which communication methodspatients use and how much they use them between the be-ginning and end of communication, none have examinedPatient-Intentional-Actions as a trigger to start communication, which was the focus of our study. To our knowledge, the results of our study represent key findings that providesuggestions for nursing practices to secure better

communication opportunities for patients. Our main findings are asfollows.

Nurses tended to start two-way communication more frequently than patients did, which suggests that nurses takethe initiative and create opportunities for communicationwith patients. This finding is consistent with reports thatcommunication exchanges are most often started by nurses

Conclusion

The results of our video-based descriptive observational study of the communication opportunities for mechanically ventilated critically ill patients showed that nurses created communication opportunities more frequently than patients did, that patients performed various types of Patient-Intentional-Action using either the upper limbs, head/face, lower limbs, or trunk, and that the nurses responded to these actions. Our findings suggest that communication opportunities are created when nurses take the initiative to talk to patients or recognize and always respond to Patient-Intentional-Actions. Were commending that nurses take the initiative to talk to patients rather than waiting for them to initiate, carefully observe Patient-Intentional-Actions.

Prior to starting, we collected information about the patients and nurses. The patient information was gleaned from electronic medical recordsand included age, diagnosis, treatment, days on mechanicalventilation, airway, and any sedatives. We evaluated the GCSstatus and RASS status by observing patient-nurse inter-actions at the beginning of data collection. Information onthe nurses included age and years of experience as a nurse and as a critical care nurse obtained through interviews.

Ethical Considerations: We contacted patients who planned to use mechanical ventilation and those who were already mechanically ventilated to recruit study participants. All patients who planned to use mechanical ventilation provided written informed consent. All who were already mechanically ventilated gave oral informed consent, and their family provided written informed consent. We explained the study outline to unit nurses in advance. On the day of data collection, we contacted the eligible nurses again to explain the study and obtain written informed consent, which all of the nurses gave. Healthcare professionals included medical doctors, physiotherapists, or nurses who provided care and not to miss it, and respond to patient-intentional-action whenever it is observed.

Conflicts of Interest

The author haves no conflicts of interest directly relevant to the content of this paper.

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